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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/798,654 | 03/11/2004 | Stephen Patrick Gavin | 5555CIP | 6418 |

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EXAMINER

KRAMER, DEVON C

ART UNIT PAPER NUMBER

3683

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/798,654

Applicant(s)

GAVIN, STEPHEN PATRICK

Examiner

Devon C Kramer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: BA, 3D. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2) Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "**means**" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

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- 3) The disclosure is objected to because of the following informalities:

It is recommended that applicant provide a description in the Summary of the Invention.

Appropriate correction is required.

Claim Objections

- 4) Claims 3-10, 12-17 and 20 are objected to because of the following informalities:

Claim 3 recites, "the outboard side" which should be --an outboard side--;

Claim 4 recites, "the inboard side" which should be --an inboard side--;

Claims 12, 15 and 20 recites, "the outer periphery" which should be --an outer periphery--;

Claim 15 recites, "the base" which should be --a base--.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

- 5) The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

- 6) Claims 2-10, 16-17, and 19-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 2 recites the limitation "said hat" in line 3. There is insufficient antecedent basis for this limitation in the claim.

Claims 6 recites "channels being defined by pillars", this is unclear because it is indefinite which pillars applicant is referring. Are these the same pillars cited in claim 1, or are these different pillars? If these are the same pillars the claim should read --said pillars--.

Claim 10 recites, "inner pillars". Inner pillars were previously recited in claim 1, are these different inner pillars?

Claim 16 recites the limitation "said intermediate radially aligned inner pillar" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

7) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8) Claims 1 and 22-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Dunn et al (5542503).

In re claims 1 and 22-23, Dunn et al provides a disc brake rotor having a central hub (47) coaxial with and supporting annular rings (44, 45) which are form an inboard brake disc and an outboard brake disc for engagement with brake pads (23,25), the inboard and outboard discs maintained in a parallel spaced apart configuration by pillars

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(figure 5) with channels (figure 6) defined between the pillars, air being drawn in through vent means (space between the two discs), the pillars arranged in repeating clusters of six with each cluster in cross section including radially aligned inner (46b) outer (46d) pillars with pairs of radially aligned intermediate pillars (46a, c) positioned symmetrically one pair on each side of a radially aligned central axis defined by the radially aligned inner and outer pillars, each pair of the pairs of radially aligned intermediate pillars defining a channel between the pillars comprising the pair; the channel offset from a radially aligned direction.

Claim Rejections - 35 USC § 103

9) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10) Claims 2 and 11-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al (5542503).

In re claim 2, the embodiment of Dunn et al used to reject claim 1 lacks the teaching of the hat having inclined sides.

Figure 1, labeled prior art of Dunn et al teaches inclined sides of the hat, the hat capable of acting as a heat dam.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the hat of Dunn's figure 1 with the rotor of figure 4 to provide a known means to connect the rotor to a wheel and to enhance heat dissipation.

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In re claims 11 and 18, Dunn et al is silent to the intervals of the clusters.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the clusters circumferentially at 10 or 20 degree intervals, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. In re Boesch, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

In re claims 12-17 and 19-20, Dunn et al teaches the arrangement of the inner and outer pillars.

In re claim 21, Dunn et al teaches shapes which can be considered diamond shaped or triangular shaped, but lacks the teaching of alternating shapes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the inner pillars of Dunn et al with alternating shapes merely as a design choice and since it has been held that the shape of a part in a device would be an obvious variant absent any particular evidence that the particular shape of the claimed part was significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

11) Claims 3-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dunn et al (5542503) in view of Baumgartner (6626273).

In re claims 3-8, Dunn et al provides the cluster arrangement of the pillars and vents on the inboard side, but lacks the teaching of inlet vents on the outboard side of the heat dam.

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Baumgartner teaches vent means including vents (see figure 7) on the outboard side of the rotor and contoured vents on the inboard side. .

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the brake rotor or Dunn et al with the vent of Baumgartner merely to increase the air flowing over and through the discs.

In re claim 9, Dunn et al teaches pillars with a similar shape to those of the instant application. It is unclear what applicant means by an overlapping edge, but this term has been interpreted to mean that portions of the pillars overlap.

In re claim 10, Dunn et al teaches shapes which can be considered diamond shaped or triangular shaped, but lacks the teaching of alternating shapes.

It would have been obvious to one of ordinary skill in the art at the time of the invention to have provided the inner pillars of Dunn et al with alternating shapes merely as a design choice and since it has been held that the shape of a part in a device would be an obvious variant absent any particular evidence that the particular shape of the claimed part was significant. In re Dailey, 357 F.2d 669, 149 USPQ 47 (CCPA 1966)

Conclusion

12) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wirth, Kobayashi, Oberti et al, Nakamura et al, Koschinat, and Giorgetti all provide brake discs with shaped pillars.

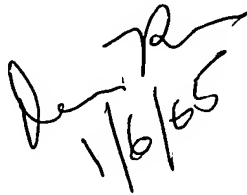
13) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Devon C Kramer whose telephone number is 703-305-0839. The examiner can normally be reached on Mon-Fri 8-4.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor can be reached on 703-308-0830. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DK

Handwritten signature and date 1/6/05